

CLAIMS

1. Electronic device (1) including a case (2) containing a watch movement on which a dial (4) is mounted, said watch movement including electronic circuits (20) able to generate time signals to be sent to motor means (27) controlling at least two analogue display members (10, 11), said analogue display members being arranged
5 above the dial (4) to display the current time in a first operating mode, called the time mode, the device (1) further including a sensor (23, 52) for a physical magnitude, for the periodic acquisition of the value of said physical magnitude as a function of time in a second operating mode, said sensor being connected to means for processing said values capable of generating electric signals to storage means (26) provided for
10 storing said values, characterized in that it has a third operating mode called the historic mode in which said processing means are arranged for generating control signals to be sent to said motor means for a display representative of the stored values of the physical magnitude as a function of time, such that at least a first (10) of said analogue display members indicates, opposite suitable graduations (8, 9, 33, 42,
15 51) of the device, the value of a variable the change in which is linked to said physical magnitude value, on condition that said variable does not give any indication relating to the time remaining before a decompression stop has to be made or any indication relating to a minimum depth not to be exceeded by the person wearing the watch when coming up from a dive, when the second of said analogue display members is
20 made to indicate information relating to a depth.

2. Device according to claim 1, characterized in that in said historic mode said processing means are further arranged for generating signals to be sent to said motor means such that said analogue display means (10, 11) remain superposed.

3. Device according to claim 1, characterized in that in said historic mode
25 said processing means are also arranged for generating signals to be sent to said motor means such that the second analogue display member (11) is positioned opposite the twelve o'clock position.

4. Device according to claim 1, characterized in that in said historic mode, said processing means are further arranged for generating signals to be sent to said
30 motor means, such that at a given instant the second analogue display member (11) indicates the elapsed time since the start of said acquisition whereas said first analogue display member (10) indicates the value of said variable at said instant.

5. Device according to claim 1, characterized in that it includes additional means (21) for calculating the value of a second variable from said measured value of
35 the physical magnitude, said processing means being arranged for generating signals

to be sent to said motor means such that the second display member (11) indicates at each instant, in said historic mode, the value of said second variable corresponding to the value of said variable displayed by said first display member (10).

6. Device according to claim 1, said sensor being a magnetic field sensor,
5 characterized in that, in said historic mode, said processing means are arranged for generating signals to be sent to said motor means such that said analogue display members (10, 11) are aligned so as to indicate magnetic north.

7. Device according to any of claims 1 to 5, characterized in that in that said sensor is an ambient pressure sensor.

10 8. Device according to claim 7, characterized in that said first analogue display member (10) indicates a measured depth.

9. Device according to claim 8, characterized in that it further includes means for automatically activating said second operating mode from said time mode in response to immersion of the device (1) in water.

15 10. Device according to claim 7, characterized in that said first analogue display member (10) indicates a measured altitude.

11. Device according to claim 10, characterized in that said second analogue display member (11) indicates an altitude difference value.

20 12. Device according to claim 7, characterized in that said first analogue display member (10) indicates a substantially instantaneous altitude variation speed.

25 13. Device according to claim 12, characterized in that additional means are provided for generating signals to be sent to said control means such that said second analogue display member (11) further indicates, in said historic mode and at a given instant, a means altitude variation speed calculated over a predefined period of time preceding said given instant.

30 14. Device according to any of the preceding claims, characterized in that it includes a sensor (52) for measuring a physical magnitude representative of the ambient temperature, said electronic circuits being capable of storing the measurements of said temperature sensor to generate electric signals to be sent to said motor means (27) such that one of said analogue display members indicates the temperature value in said historic mode.

35 15. Device according to any of the preceding claims, characterized in that in said second operating mode, said processing means are arranged for generating signals to be sent to said motor means such that, during the course of said acquisition, the display of the device is identical to the time mode display.

16. Device according to any of the preceding claims 1 to 12, characterized in that in said second operating mode, said processing means are arranged for

generating signals to be sent to said motor means such that said first analogue display member (10) display the value of said variable substantially in real time.

17. Device according to any of the preceding claims, characterized in that, in said historic mode, said electronic circuits (20) are capable of operating said motor means (27) such that the display of the value of said variable as a function of time is performed over a predefined maximum period of time, such that if the actual duration of said acquisition is greater than said predefined period of time, the value of said variable as a function of time is displayed in an accelerated manner.

18. Device according to any of the preceding claims, characterized in that said electronic circuits (20) are arranged for periodically storing said measured values in said second operating mode.

19. Device according to claim 18, characterized in that said electronic circuits (20) are arranged for altering the storage period of said measured values as a function of the actual duration of said acquisition.

20. Device according to any of the preceding claims, characterized in that it further includes a liquid crystal display (60) for displaying complementary information to the indications provided by said analogue display means (10, 11).

21. Electronic device (1) including a case (2) containing a dial (4), electronic circuits (20) including in particular a time base and able to generate time signals to be sent to motor means (27) controlling at least two analogue display members (10, 11), arranged above the dial (4), the device (1) further including a sensor (23, 52) for a physical magnitude, for the periodic acquisition of the value of said physical magnitude as a function of time in a particular operating mode, said sensor being connected to means for processing said values capable of generating electric signals to storage means (26) provided for storing said values, characterized in that it has an additional operating mode called the historic mode in which said processing means are arranged for generating control signals to be sent to said motor means for a display representative of the stored values of the physical magnitude as a function of time, such that at least a first (10) of said analogue display members indicates, opposite suitable graduations (8, 9, 33, 42, 51) of the device, the value of a variable the change in which is linked to said physical magnitude value, on condition that said variable does not give any indication relating to the time remaining before a decompression stop has to be made, when the second of said analogue display members is made to indicate information relating to a depth.

22. Historic display method for electronic device (1) including a case (2) containing a watch movement on which a dial (4) is mounted, said watch movement including electronic circuits (20) able to generate time signals to be sent to motor

means (27) controlling at least two analogue display members (10, 11), said analogue display members being arranged above the dial (4) to display the current time in a first operating mode, called the time mode, the device (1) further including a sensor (23, 52) for a physical magnitude, the method including the steps of :

- 5 a) first of all, performing a periodic acquisition of the value of said physical magnitude as a function of time in a second operating mode of said electronic device,
- b) transmitting the results of said periodic acquisition to means for processing said values capable of generating electric signals to be sent to storage means (26) provided for storing said values,
- 10 characterized in that it further includes, in a third operating mode called the historic mode, a subsequent step consisting in controlling said motor means to form a display representative of the stored values of the physical magnitude as a function of time, at least a first (10) of said analogue display members indicating, opposite appropriate graduations (8, 9, 33, 42, 51) of the device, the value of a variable the
- 15 change in which is linked to said physical magnitude value, on condition that said variable does not give any indication relating to the time remaining before a decompression stop has to be made, when the second of said analogue display members is made to indicate information relating to a depth.